9/ 963 855

WEST Search History

DATE: Friday, November 28, 2003

Set Name	Query	Hit Count	Set Name
side by side			result set
	DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR		
L25	L24 and ((internet or web or www or online or network$) with search$)	30	L25
L24	L23 and (minim$ with (cost$ or bill$ or charg$))	43	L24
L23	(minimum with (cpc or cost$ or click$)) and rank$ and (search$ with term)	45	L23
L22	((minimum with (cpc or cost$ or click$)) and rank$ and term$) and search$	270	L22
	DB=JPAB,EPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L21	(cpc or cost$ or click$) and rank$ and term$ and (search$ with term)	3	L21
L20	((minimum same (cpc or cost$ or click$)) and rank$ and term$) and (search$ with term)	0	L20
L19	((minimum same (cpc or cost$ or click$)) and rank$ and term$) and search$	0	L19
L18	((minimum with (cpc or cost$ or click$)) and rank$ and term$) and search$	0	L18
	DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR		
L17	L3 and ((control$ or manag$) with cost$ with click$)	0	L17
L16	L5 and ((control$ or manag$) with cost$ with click$)	0	L16
L15	L5 and ((control$ or manag$) with cpc)	0	L15
L14	L6 and ((control$ or manag$) with cpc)	0	L14
L13	L5 and (minimum with (cost$ with click$))	0	L13
L12	L6 and (minimum with (cost$ or click$))	44	L12
L11	(minimum with cpc) and rank$ and term$ and search$	1	L11
L10	L9 not l8	1	L10
L9	L3 and cpc	3	L9
L8	L4 and cpc	2	L8
L7	L6 and (minimum with (cpc or cost$ or click$))	44	L7
L6	L4 and @ad<=19990528	44	L6
L5	L4 and @ad<=20010724	54	L5
L4	L3 and ((internet or web or www or onlin or network$) with search$)	58	L4
L3	((minimum with (cpc or cost$ or click$)) and rank$ and term$) and search$	270	L3
L2	((minimum same cost$) same rank$ same click same term$) and	0	L2

| L2 | search$ | U | L2 |
| L1 | ((minimum with cost$) same rank$ same click same term$) and search$ | 0 | L1 |

END OF SEARCH HISTORY

WEST

☐ | Generate Collection | | Print |

L8: Entry 1 of 2   File: USPT   Aug 26, 2003

US-PAT-NO: 6611840
DOCUMENT-IDENTIFIER: US 6611840 B1

TITLE: Method and system for removing content entity object in a hierarchically
structured content object stored in a database

DATE-ISSUED: August 26, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Baer; William J.	San Jose	CA		
Hanapole; Edward	Pine Brook	NJ		
Hartman, Jr.; Robert C.	San Jose	CA		
Hennessy; Richard D.	York	ME		
Johnson, Jr.; Eugene	Lexington	KY		
Kao; I-Ming	San Jose	CA		
Murray; Janet L.	Los Gatos	CA		
Robertson, III; Jerry D.	San Jose	CA		
Walkus; Richard W.	Wayne	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
International Business Machines Corporation	Armonk	NY			02
Pearson Education, Inc.	Upper Saddle River	NJ			02

APPL-NO: 09/ 489087   [PALM]
DATE FILED: January 21, 2000

PARENT-CASE:
CROSS REFERENCE TO RELATED APPLICATIONS This application is related to the co-pending
and commonly assigned patent applications listed below, which were filed herewith on
Jan. 21, 2000 and are all incorporated by reference herein: Method and System for
Adding User-Provided Content to a Content Object Stored in a Data Repository Ser. No.
09/488,976 Method and System for Moving Content in a Content Object Stored in a Data
Repository Ser. No. 09/488,971 is now pending Prerequisite Checking in a System for
Creating Compilations of Content Ser. No. 09/488,9691 is now pending Method and System
for Preventing Mutually Exclusive Content Entities Stored in a Data Repository to be
Included in the Same Compilation of Content Ser. No. 09/489,265 is now pending Volume
Management Method and System for a Compilation of Content Ser. No. 09/489,090 is now
U.S. Pat. No. 6,669,627 Method and System for Calculating Cost of a Compilation of
Content Ser. No. 09/489,143 is now pending Method and System for Storing Hierarchical
Content Objects in a Data Repository Ser. No. 09/489,570 is now pending File Structure
for Storing Content Objects in a Data Repository Ser. No. 09/489,730 is now pending
Providing a Functional Layer for Facilitating Creation and Manipulation of
Compilations of Content Ser. No. 09/489,605 is now pending A Hitmask for Querying
Hierarchically Related Content Entities Ser. No. 09/489,133 is now pending A Method
and Configurable Model for Storing Hierarchical Data in a Non-Hierarchical Data

⬤ ⬤

Repository Ser. No. 09/489,561 is now pending

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 707/102; 707/1, 707/100, 707/103, 707/104.1, 707/501.1, 707/513
US-CL-CURRENT: 707/102; 707/1, 707/100, 707/104.1, 715/501.1, 715/513

FIELD-OF-SEARCH: 707/1-10, 707/100-104.1, 707/501.1, 707/511-514, 707/907-908, 345/739, 345/764, 345/760, 345/769, 345/826, 345/854, 345/660, 709/200-203, 709/216-219, 705/10, 705/26-27

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected	Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3964029	June 1976	Babb	340/172.5
☐	4823306	April 1989	Barbic et al.	364/900
☐	5251315	October 1993	Wang	395/600
☐	5274757	December 1993	Miyoshi et al.	395/146
☐	5297039	March 1994	Kanaegami et al.	364/419.13
☐	5377348	December 1994	Lau et al.	395/600
☐	5388196	February 1995	Pajak et al.	395/153
☐	5579471	November 1996	Barber et al.	395/326
☐	5664182	September 1997	Nierenberg et al.	707/102
☐	5680619	October 1997	Gudmundson et al.	395/701
☐	5758351	May 1998	Gibson et al.	707/104.1
☐	5778398	July 1998	Nagashima et al.	707/501
☐	5781732	July 1998	Adams	395/200.35
☐	5787413	July 1998	Kauffman et al.	707/2
☐	5806061	September 1998	Chaudhuri et al.	707/3
☐	5847709	December 1998	Card et al.	345/775
☐	5848404	December 1998	Hafner et al.	707/3
☐	5848409	December 1998	Ahn	707/3
☐	5857203	January 1999	Kauffman	707/200
☐	5890147	March 1999	Peltonen et al.	707/1
☐	5956715	September 1999	Glasser et al.	707/9
☐	5963940	October 1999	Liddy et al.	704/9
☐	5991756	November 1999	Wu	707/3
☐	6134552	October 2000	Fritz et al.	707/1
☐	6212530	April 2001	Kadlec	707/201
☐	6243709	June 2001	Tung	707/103R
☐	6449627	September 2002	Baer et al.	715/514

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
63-286931	November 1988	JP	
WO9932982	July 1999	WO	

OTHER PUBLICATIONS

IBM Digital Library "Application Programming Reference", Version 2", Second Edition
(Sep. 1997) pp. 1147-1257.
IBM Digital Library "Guide to Object-Oriented and Internet Application Programming",
Version 2", Second Edition (Sep. 1997) , pp. 1-169.
IBM Digital Library "Text Search Using TextMiner Application Programming Reference"
First Edition, Sep. 1997. pp. 1-246.

ART-UNIT: 2177

PRIMARY-EXAMINER: Channavajjala; Srirama

ATTY-AGENT-FIRM: Foerster; Ingrid M.

ABSTRACT:

A web-based system, method and program product are provided for adding content to a
content object stored (e.g., a custom compilation or prepublished work) in a data
repository as a group of hierarchically related content entities. Each noncontainer
content object is preferably stored as a separate entity in the data repository. Each
content entity is also stored as a row in a digital library index class as a
collection of attributes and references to related content entities and containers. As
the user selects desired objects for inclusion in a content object, the system
arranges the objects hierarchically, e.g., into volumes, chapters and sections
according to the order specified by the user. The system then creates a file object
(e.g., a CBO) defining the content object that contains a list or outline of the
container and noncontainer entities selected, their identifiers, order and structure.
This file object is stored separately in the data repository. Content is removed from
the compilation by removing the container or noncontainer identifier from the list or
outline. This is achieved through a user interface by providing a mechanism for
enabling a user to select a container or noncontainer (e.g., by title) to be removed.

39 Claims, 36 Drawing figures

L21: Entry 1 of 3   File: EPAB   Feb 5, 2003

PUB-NO: EP001282060A2
DOCUMENT-IDENTIFIER: EP 1282060 A2
TITLE: System and method for providing place and price protection in a search result
list generated by a computer network search engine

PUBN-DATE: February 5, 2003

INVENTOR-INFORMATION:

NAME	COUNTRY
CHEUNG, DOMINIC DOUGH-MING	US
SINGH, NARINDER PAL	US
SOULANILLE, THOMAS A	US
DAVIS, DARREN J	US

ASSIGNEE-INFORMATION:

NAME	COUNTRY
OVERTURE SERVICES INC	US

APPL-NO: EP02255466
APPL-DATE: August 5, 2002

PRIORITY-DATA: US92202801A (August 3, 2001)

INT-CL (IPC): G06 F 17/60; G06 F 17/30
EUR-CL (EPC): G06F017/30

ABSTRACT:

CHG DATE=20030305 STATUS=O> A method and apparatus for managing search listings
(344) in a search database (38) include storing one or more search listings for an
advertiser. Each search listing includes an associated search term (352). The system
receives from the advertiser identification information for a search listing and a
desired rank for the identified search listing, a maximum cost per click for the
search listing, or both. The system stores the desired rank and/or maximum cost per
click for the search listing. The system then determines a cost per click for the
identified search listing based on the desired rank and other search listings which ■

include the search term associated with the identified search listing. ⌐⌐

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L21: Entry 2 of 3   File: DWPI   Nov 14, 2002

DERWENT-ACC-NO: 2003-199412
DERWENT-WEEK: 200374
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TITLE: Internet based database search apparatus includes search engine to search
database in which search list, search items, bid rank and desired rank for
advertisers are stored

INVENTOR: CHEUNG, D D; DAVIS, D J ; SINGH, N P ; SOULANILLE, T A ; DOUGH, M C D ;
PAL, S N

PATENT-ASSIGNEE: OVERTURE SERVICES INC (OVERN), OVERTURE SERVICE CORP (OVERN),
CHEUNG D D (CHEUI), DAVIS D J (DAVII), SINGH N P (SINGI), SOULANILLE T A (SOULI)

PRIORITY-DATA: 2001US-0922028 (August 3, 2001), 1999US-0322677 (May 28, 1999),
2001US-0911674 (July 24, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20020169760 A1	November 14, 2002		073	G06F007/00
EP 1282060 A2	February 5, 2003	E	000	G06F017/60
FR 2828310 A1	February 7, 2003		000	G06F017/60
DE 10235429 A1	March 20, 2003		000	G06F017/60
CA 2396501 A1	February 3, 2003	E	000	G06F017/30
WO 2003014865 A2	February 20, 2003	E	000	G06F000/00
GB 2381345 A	April 30, 2003		000	G06F017/60
KR 2003013333 A	February 14, 2003		000	G06F017/30
CN 1407487 A	April 2, 2003		000	G06F017/30
JP 2003233684 A	August 22, 2003		195	G06F017/60

DESIGNATED-STATES: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC
MK NL PT RO SE SI SK TR AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ
DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM
TN TR TT TZ UA UG UZ VN YU ZA ZM ZW AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM
GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US20020169760A1	May 28, 1999	1999US-0322677	Cont of
US20020169760A1	July 24, 2001	2001US-0911674	CIP of
US20020169760A1	August 3, 2001	2001US-0922028	
US20020169760A1		US 6269361	Cont of
EP 1282060A2	August 5, 2002	2002EP-0255466	
FR 2828310A1	August 2, 2002	2002FR-0009909	
DE 10235429A1	August 2, 2002	2002DE-1035429	
CA 2396501A1	August 1, 2002	2002CA-2396501	
WO2003014865A2	July 24, 2002	2002WO-US23502	
GB 2381345A	August 5, 2002	2002GB-0018132	
KR2003013333A	August 3, 2002	2002KR-0045944	
CN 1407487A	August 3, 2002	2002CN-0147281	
JP2003233684A	August 2, 2002	2002JP-0260581	

INT-CL (IPC): G06 F 0/00; G06 F 7/00; G06 F 17/30; G06 F 17/60; G09 F 19/00; H04 L 12/16

RELATED-ACC-NO: 2001-327720;2002-048793 ;2002-105680 ;2003-120213 ;2003-168005 ;2003-203316 ;2003-362948 ;2003-710850

ABSTRACTED-PUB-NO: US20020169760A
BASIC-ABSTRACT:

NOVELTY - A search engine searches a database comprising a search list which includes search term specified by the advertiser and bid rank associated with the search term. The bid rank includes maximum cost per click chargeable to the advertiser and rank desired by the advertiser.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) Method for managing search listing in database;

(2) System for managing search listing in database;

(3) Method of generating a search result list;

(4) Method of enabling network information provider to update information;

(5) Method of determining cost per click and search listings to be associated with each rank position of a search result display; and

(6) Database search system.

USE - Internet based database search apparatus.

ADVANTAGE - Reduces workload on advertisers to maintain economic position by detecting cost per click (CPC) for search items and notifying CPC to advertisers based on interaction of users with the search items over the internet.

DESCRIPTION OF DRAWING(S) - The figure shows the chart of menus, display screens and input screens in the database search apparatus.

ABSTRACTED-PUB-NO: US20020169760A
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.2/39

DERWENT-CLASS: P85 T01
EPI-CODES: T01-J05B3; T01-J05B4; T01-N01A;

L21: Entry 3 of 3   File: DWPI   Apr 1, 2003

DERWENT-ACC-NO: 2000-023076
DERWENT-WEEK: 200366
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TITLE: Document ranking method for retrieving hypertext documents in web site

INVENTOR: CHAKRABARTI, S; DOM, B E

PATENT-ASSIGNEE: IBM CORP (IBMC), IBM UK LTD (IBMC), INT BUSINESS MACHINES CORP (IBMC)

PRIORITY-DATA: 1998US-0058635 (April 10, 1998)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
TW 526432 A	April 1, 2003		000	G06F017/30
WO 9953418 A1	October 21, 1999	E	027	G06F017/30
US 6125361 A	September 26, 2000		000	G06F017/30
EP 1070296 A1	January 24, 2001	E	000	G06F017/30
CN 1296589 A	May 23, 2001		000	G06F017/30

DESIGNATED-STATES: CA CN JP KR PL AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE DE FR GB IE IT NL

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
TW 526432A	February 9, 1999	1999TW-0101973	
WO 9953418A1	March 12, 1999	1999WO-GB00752	
US 6125361A	April 10, 1998	1998US-0058635	
EP 1070296A1	March 12, 1999	1999EP-0907779	
EP 1070296A1	March 12, 1999	1999WO-GB00752	
EP 1070296A1		WO 9953418	Based on
CN 1296589A	March 12, 1999	1999CN-0804913	

INT-CL (IPC): G06 F 17/30
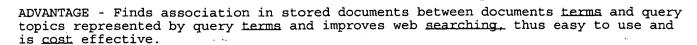
ABSTRACTED-PUB-NO: US 6125361A
BASIC-ABSTRACT:

NOVELTY - The reference to a second document in a first document is identified and lexical distance which defines document terms is received. The query terms are received and number times query terms present in first document within the lexical distance of reference of the second document is determined for ranking the documents.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for method for finding associations in computer stored documents between document terms and query topics.

USE - For retrieving hypertext documents in web site and also other documents such as patents, academic papers, articles, books, E-mails, etc.

ADVANTAGE - Finds association in stored documents between documents terms and query topics represented by query terms and improves web searching, thus easy to use and is cost effective.

DESCRIPTION OF DRAWING(S) - The figure shows flowchart representing logic for growing list of web sites in response to query.

ABSTRACTED-PUB-NO: WO 9953418A
EQUIVALENT-ABSTRACTS:

NOVELTY - The reference to a second document in a first document is identified and lexical distance which defines document terms is received. The query terms are received and number times query terms present in first document within the lexical distance of reference of the second document is determined for ranking the documents.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for method for finding associations in computer stored documents between document terms and query topics.

USE - For retrieving hypertext documents in web site and also other documents such as patents, academic papers, articles, books, E-mails, etc.

ADVANTAGE - Finds association in stored documents between documents terms and query topics represented by query terms and improves web searching, thus easy to use and is cost effective.

DESCRIPTION OF DRAWING(S) - The figure shows flowchart representing logic for growing list of web sites in response to query.

CHOSEN-DRAWING: Dwg.3/6

DERWENT-CLASS: T01
EPI-CODES: T01-E01A; T01-H07C3C; T01-H07C5E; T01-J05B1; T01-J05B3;

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DOCUMENT-IDENTIFIER: US 5754939 A
TITLE: System for generation of user profiles for a system for customized electronic
identification of desirable objects

Abstract Text (1):
This invention relates to customized electronic identification of desirable objects,
such as news articles, in an electronic media environment, and in particular to a
system that automatically constructs both a "target profile" for each target object
in the electronic media based, for example, on the frequency with which each word
appears in an article relative to its overall frequency of use in all articles, as
well as a "target profile interest summary" for each user, which target profile
interest summary describes the user's interest level in various types of target
objects. The system then evaluates the target profiles against the users' target
profile interest summaries to generate a user-customized rank ordered listing of
target objects most likely to be of interest to each user so that the user can
select from among these potentially relevant target objects, which were
automatically selected by this system from the plethora of target objects that are
profiled on the electronic media. Users' target profile interest summaries can be
used to efficiently organize the distribution of information in a large scale system
consisting of many users interconnected by means of a communication network.
Additionally, a cryptographically-based pseudonym proxy server is provided to ensure
the privacy of a user's target profile interest summary, by giving the user control
over the ability of third parties to access this summary and to identify or contact
the user.

Brief Summary Text (2):
This invention relates to customized electronic identification of desirable objects,
such as news articles, in an electronic media environment, and in particular to a
system that automatically constructs both a "target profile" for each target object
in the electronic media based, for example, on the frequency with which each word
appears in an article relative to its overall frequency of use in all articles, as
well as a "target profile interest summary" for each user, which target profile
interest summary describes the user's interest level in various types of tar get
objects. The system then evaluates the target profiles against the users' target
profile interest summaries to generate a user-customized rank ordered listing of
target objects most likely to be of interest to each user so that the user can
select from among these potentially relevant target objects, which were
automatically selected by this system from the plethora of target objects that are
profiled on the electronic media. Users' target profile interest summaries can be
used to efficiently organize the distribution of information in a large scale system
consisting of many users interconnected by means of a communication network.
Additionally, a cryptographically based proxy server is provided to ensure the
privacy of a user's target profile interest summary, by giving the user control over
the ability of third parties to access this summary and to identify or contact the
user.

Brief Summary Text (15):
Relevant definitions of terms for the purpose of this description include: (a.) an
object available for access by the user, which may be either physical or electronic
in nature, is termed a "target object", (b.) a digitally represented profile
indicating that target object's attributes is termed a "target profile", (c.) the
user looking for the target object is termed a "user", (d.) a profile holding that
user's attributes, including age/zip code/etc. is termed a "user profile", (e.) a
summary of digital profiles of target objects that a user likes and/or dislikes, is
termed the "target profile interest summary" of that user, (f) a profile consisting

of a collection of attributes, such that a user likes target objects whose profiles are similar to this collection of attributes, is termed a "search profile" or in some contexts a "query" or "query profile," (g.) a specific embodiment of the target profile interest summary which comprises a set of search profiles is termed the "search profile set" of a user, (h.) a collection of target objects with similar profiles, is termed a "cluster," (i.) an aggregate profile formed by averaging the attributes of all target objects in a cluster, termed a "cluster profile," (j.) a real number determined by calculating the statistical variance of the profiles of all target objects in a cluster, is termed a "cluster variance," (k.) a real number determined by calculating the maximum distance between the profiles of any two target objects in a cluster, is termed a "cluster diameter."

Brief Summary Text (16):
The system for electronic identification of desirable objects of the present invention automatically constructs both a target profile for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the user can select from among these potentially relevant target objects, which were automatically selected by this system from the plethora of target objects available on the electronic media.

Brief Summary Text (19):
The preferred embodiment of the system for customized electronic identification of desirable objects operates in an electronic media environment for accessing these target objects, which may be news, electronic mail, other published documents, or product descriptions. The system in its broadest construction comprises three conceptual modules, which may be separate entities distributed across many implementing systems, or combined into a lesser subset of physical entities. The specific embodiment of this system disclosed herein illustrates the use of a first module which automatically constructs a "target profile" for each target object in the electronic media based on various descriptive attributes of the target object. A second module uses interest feedback from users to construct a "target profile interest summary" for each user, for example in the form of a "search profile set" consisting of a plurality of search profiles, each of which corresponds to a single topic of high interest for the user. The system further includes a profile processing module which estimates each user's interest in various target objects by reference to the users' target profile interest summaries, for example by comparing the target profiles of these target objects against the search profiles in users' search profile sets, and generates for each user a customized rank-ordered listing of target objects most likely to be of interest to that user. Each user's target profile interest summary is automatically updated on a continuing basis to reflect the user's changing interests.

Detailed Description Text (69):
Instead of breaking the text into its component words, one could alternatively break the text into overlapping word bigrams (sequences of 2 adjacent words), or more generally, word n-grams. These word n-grams may be scored in the same way as individual words. Another possibility is to use character n-grams. For example, this sentence contains a sequence of overlapping character 5-grams which starts "for e", "or ex", "r exa", "exam", "examp", etc. The sentence may be characterized, imprecisely but usefully, by the score of each possible character 5-gram ("aaaaa", "aaaab", . . . "zzzzz") in the sentence. Conceptually speaking, in the character 5-gram case, the textual attribute would be decomposed into at least $26.sup.5$ $=11,881,376$ numeric attributes. Of course, for a given target object, most of these numeric attributes have values of 0, since most 5-grams do not appear in the target object attributes. These zero values need not be stored anywhere. For purposes of digital storage, the value of a textual attribute could be characterized by storing the set of character 5-grams that actually do appear in the text, together with the nonzero score of each one. Any 5-gram that is not included in the set can be assumed to have a score of zero. The decomposition of textual attributes is not limited to attributes whose values are expected to be long texts. A simple, one-term textual attribute can be replaced by a collection of numeric attributes in exactly the same way. Consider again the case where the target objects are movies. The "name of director" attribute, which is textual, can be replaced by numeric attributes giving

the scores for "Federico-Fellini," "Woody-Allen," "Terence-Davies," and so forth, in that attribute. For these one-term textual attributes, the score of a word is usually defined to be its rate in the text, without any consideration of global frequency. Note that under these conditions, one of the scores is 1, while the other scores are 0 and need not be stored. For example, if Davies did direct the film, then it is "Terence-Davies" whose score is 1, since "Terence-Davies" constitutes 100% of the words in the textual value of the "name of director" attribute. It might seem that nothing has been gained over simply regarding the textual attribute as having the string value "Terence-Davies." However, the trick of decomposing every non-numeric attribute into a collection of numeric attributes proves useful for the clustering and decision tree methods described later, which require the attribute values of different objects to be averaged and/or ordinally ranked. Only numeric attributes can be averaged or ranked in this way.

Detailed Description Text (117):
In step 5 of this pseudo-code, smaller thresholds are typically used at lower levels of the tree, for example by making the threshold an affine function or other function of the cluster variance or cluster diameter of the cluster p.sub.i. If the cluster tree is distributed across a plurality of servers, as described in the section of this description titled "Network Context of the Browsing System", this process may be executed in distributed fashion as follows: steps 3-7 are executed by the server that stores the root node of hierarchical cluster tree T, and the recursion in step 7 to a subcluster tree T.sub.i involves the transmission of a search request to the server that stores the root node of tree T.sub.i, which server carries out the recursive step upon receipt of this request. Steps 1-2are carried out by the processor that initiates the search, and the server that executes step 6 must send a message identifying the target object to this initiating processor, which adds it to the list.
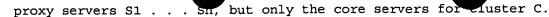
Detailed Description Text (242):
Algorithms for constructing multicast trees have either been ad-hoc, as is the case of the Deering, et al. Internet multicast tree, which adds clients as they request service by grafting them into the existing tree, or by construction of a minimum cost spanning tree. A distributed algorithm for creating a spanning tree (defined as a tree that connects, or "spans," all nodes of the graph) on a set of Ethernet bridges was developed by Radia Perlman ("Interconnections: Bridges and Routers," Radia Perlman, Addison-Wesley, 1992). Creating a minimal-cost spanning tree for a graph depends on having a cost model for the arcs of the graph (corresponding to communications 1 inks in the communications network). In the case of Ethernet bridges, the default cost (more complicated costing models for path costs are discussed on pp. 72-73 of Perlman) is calculated as a simple distance measure to the root; thus the spanning tree minimizes the cost to the root by first electing a unique root and then constructing a spanning tree based on the distances from the root. In this algorithm, the root is elected by recourse to a numeric ID contained in "configuration messages": the server w hose ID has minimum numeric value is chosen as the root. Several problems exist with this algorithm in general. First, the method of using an ID does not necessarily select the best root for the nodes interconnected in the tree. Second, the cost model is simplistic.

Detailed Description Text (250):
In another variation, where target profile interest summaries are embodied as search profile sets, the following procedure is followed to compute w(Si, C): (a). For each search profile P.sub.s. in the locally stored search profile set of any user in the user base of proxy server Si, proxy server Si computes the distance d(P.sub.s, P.sub.c) between the search profile and the cluster profile P.sub.c of cluster C. (b). w(SiC) is chosen to be the maximum value of (-d(P.sub.s,P.sub.c)/r) across all such search profiles P.sub.s, where r is computed as an affine function of the cluster diameter of cluster C. The slope and/or intercept of this affine function are chosen to be smaller (thereby increasing w(Si, C)) for servers Si for which the target object provider wishes to improve performance, as may be the case if the users in the user base of proxy server Si pay a premium for improved performance, or if performance at Si will otherwise be unacceptably low due to slow network connections.

Detailed Description Text (258):
5. The multicast tree MT(C) is computed by standard methods to be the minimum spanning tree (or a near-minimum spanning tree) for G(C), where the weight of an edge between two core servers is taken to b e the cost of transmitting a message between those two core servers. Note that MT(C) does not contain as vertices all

proxy servers S1 . . . Sn, but only the core servers for Cluster C.

Detailed Description Text (272):
When multiple versions of a file F exist on local servers throughout the data communication network N, but are not marked as alternate versions of the same file, the system's ability to rapidly locate files similar to F (by treating them as target objects and applying the methods disclosed in "Searching for Target Objects" above) makes it possible to find all the alternate versions, even if they are stored remotely. These related data files may then be reconciled by any method. In a simple instantiation, all versions of the data file would be replaced with the version that had the latest date or version number. In another instantiation, each version would be automatically annotated with references or pointers to the other versions.

Detailed Description Text (298):
The filtering technology of the news clipping service is not limited to news articles provided by a single source, but may be extended to articles or target objects collected from any number of sources. For example, rather than identifying new news articles of interest, the technology may identify new or updated World Wide Web pages of interest. In a second application, termed "broadcast clipping," where individual users desire to broadcast messages to all interested users, the pool of news articles is replaced by a pool of messages to be broadcast, and these messages are sent to the broadcast-clipping-service subscribers most interested in them. In a third application, the system scans the transcripts of all real-time spoken or written discussions on the network that are currently in progress and designated as public, and employs the news-clipping technology to rapidly identify discussions that the user may be interested in joining, or to rapidly identify and notify users who may be interested in joining an ongoing discussion. In a fourth application, the method is used as a post-process that filters and ranks in order of interest the many target objects found by a conventional database search, such as a search for all homes selling for under $200,000 in a given area, for all 1994 news articles about Marcia Clark, or for all Italian-language films. In a fifth application, the method is used to filter and rank the links in a hypertext document by estimating the user's interest in the document or other object associated with each link. In a sixth application, paying advertisers, who may be companies or individuals, are the source of advertisements or other messages, which take the place of the news articles in the news clipping service. A consumer who buys a product is deemed to have provided positive relevance feedback on advertisements for that product, and a consumer who buys a product apparently because of a particular advertisement (for example, by using a coupon clipped from that advertisement) is deemed to have provided particularly high relevance feedback on that advertisement. Such feedback may be communicated to a proxy server by the consumer's client processor (if the consumer is making the purchase electronically), by the retail vendor, or by the credit-card reader (at the vendor's establishment) that the consumer uses to pay for the purchase. Given a database of such relevance feedback, the disclosed technology is then used to match advertisements with those users who are most interested in them; advertisements selected for a user are presented to that user by any one of several means, including electronic mail, automatic display on the users screen, or printing them on a printer at a retail establishment where the consumer is paying for a purchase. The threshold distance used to identify interest may be increased for a particular advertisement, causing the system to present that advertisement to more users, in accordance with the amount that the advertiser is willing to pay.

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US-PAT-NO: 5754939
DOCUMENT-IDENTIFIER: US 5754939 A

TITLE: System for generation of user profiles for a system for customized electronic identification of desirable objects

DATE-ISSUED: May 19, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Herz; Frederick S. M.	Davis	WV	26260	
Eisner; Jason M.	Philadelphia	PA	19107	
Ungar; Lyle H.	Philadelphia	PA	19103	
Marcus; Mitchell P.	Philadelphia	PA	19119	

APPL-NO: 08/ 551197   [PALM]
DATE FILED: October 31, 1995

PARENT-CASE:
CROSS-REFERENCE TO RELATED APPLICATIONS This patent application is a continuation-in-part of U.S. patent application Ser. No. 08/346,425, filed Nov. 28, 1994 and titled "SYSTEM AND METHOD FOR SCHEDULING BROADCAST OF AND ACCESS TO VIDEO PROGRAMS AND OTHER DATA USING CUSTOMER PROFILES", which application is assigned to the same assignee as the present application.

INT-CL: [06] H04 H 1/00, H04 N 7/10, H04 N 7/14, H01 J 13/00

US-CL-ISSUED: 455/4.2; 348/2, 348/7, 348/10, 348/12, 395/200.49, 455/5.1
US-CL-CURRENT: 455/3.04; 709/219, 715/501.1, 725/34

FIELD-OF-SEARCH: 455/3.1, 455/4.1, 455/4.2, 455/5.1, 455/6.1, 455/6.2, 348/1, 348/2, 348/6, 348/7, 348/8, 348/10, 348/11, 348/12, 348/13, 395/200.47, 395/200.48, 395/200.49

PRIOR-ART-DISCLOSED:

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☐ 4759063	July 1988	Chaum	380/30
☐ 4914698	April 1990	Chaum	380/30
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ART-UNIT: 262

PRIMARY-EXAMINER: Peng; John K.

ASSISTANT-EXAMINER: Miller; John W.

ATTY-AGENT-FIRM: Duft, Graziano & Forest, P.C.

ABSTRACT:

This invention relates to customized electronic identification of desirable objects, such as news articles, in an electronic media environment, and in particular to a system that automatically constructs both a "target profile" for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the user can select from among these potentially relevant target objects, which were automatically selected by this system from the plethora of target objects that are profiled on the electronic media. Users' target profile interest summaries can be used to efficiently organize the distribution of information in a large scale system consisting of many users interconnected by means of a communication network. Additionally, a cryptographically-based pseudonym proxy server is provided to ensure the privacy of a user's target profile interest summary, by giving the user control over the ability of third parties to access this summary and to identify or contact the user.

22 Claims, 17 Drawing figures

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L13: Entry 1 of 1   File: USPT   Nov 25, 2003

US-PAT-NO: 6654725
DOCUMENT-IDENTIFIER: US 6654725 B1

TITLE: System and method for providing customized advertising on the World Wide Web

DATE-ISSUED: November 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Langheinrich; Marc	Tokyo			JP
Nakamura; Atsuyoshi	Tokyo			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
NEC Corporation	Tokyo			JP	03

APPL-NO: 09/ 436241   [PALM]
DATE FILED: November 9, 1999

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	10-317699	November 9, 1998

INT-CL: [07] G06 F 17/60

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US-CL-CURRENT: 705/14

FIELD-OF-SEARCH: 705/1, 705/10, 705/14, 705/26

PRIOR-ART-DISCLOSED:

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| Search Selected | Search ALL |

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ART-UNIT: 3622

PRIMARY-EXAMINER: Carlson; Jeffrey D.

ATTY-AGENT-FIRM: Foley & Lardner

ABSTRACT:

A system and method for customized advertisement selection and delivery on the World Wide Web (WWW) upon the Internet. The advertising system has a database server which stores advertisements and their campaign information, and an advertisement server which generates electronic advertisements available to a client system. In the system, a customization process which customized the electronic advertisements to be delivered to each client system is performed. A user connects to a web site and is presented with an editorial page or a list of search results. The system inserts a customized advertisement into the page that matches the page content or search topic. No identifiable data is collected during the interaction with the user. Advertisers can specify display constraints for each advertisement. The system will adapt all unrestricted parameters in order to maximize the user's click-through probability.

20 Claims, 13 Drawing figures

L13: Entry 1 of 1   File: USPT   Nov 25, 2003

DOCUMENT-IDENTIFIER: US 6654725 B1
TITLE: System and method for providing customized advertising on the World Wide Web

US Patent No. (1):
6654725

Detailed Description Text (6):
FIG. 3 shows a flow chart of the script that handles requests for an advertisement image. Upon invocation by the web server in step 1001, the script will first decode the parameters that have been passed to the script in step 1002. The Common Gateway Interface (CGI) (as defined by the NCSA) is a standard protocol that allows client and server applications to exchange data over HTTP. CGI is implemented in almost all common web server implementations today, but persons skillful in the art will realize that it is easy to provide a custom implementation with similar support. The selection process can be shortcut with explicitly requesting a particular advertisement by its advertisement ID in step 1003. Otherwise the system tries to detect customization parameters in the request in step 1005. In the example shown in FIG. 11, the user's search word is a customization parameter, but it could also be a page ID or the name of the user's browser software. In case such information has been embedded into the request, the system will call the selection module 1006 to select a customized advertisement for the particular situation. If neither advertisement ID nor customization parameters are present, the system will simply obtain a list of currently active advertisements (i.e. advertisements that feature display constraints which do not prevent them from being shown under the current conditions) in step 1007 and select the advertisement with the highest required impression rate in step 1008. The impression rate of an advertisement is simply the number of times it should be shown on a certain web page or within a certain web site, and the amount of time left in the period it should be displayed in. This information is usually given by the advertiser and needs to be within the limits of total page accesses to the publisher's web site the advertisement will be shown on. Once an advertisement id has been determined in step 1003 and the procedure of selection module 1006 has been performed, the system can then call the advertisement data module 115 (FIG. 2) for obtaining the actual image data in step 1009. After returning this information to the client at step 1010 (this of course involves adhering to proper CGI output specification) the system will log the impression of the particular advertisement in step 1011 and the customization parameter used (if any). In case no advertisement ID had been explicitly specified (step 1012), additional bookkeeping is necessary to synchronize click-throughs at a later time. Should some form of session ID be embedded in the request in step 1013, the system assumes that the corresponding hyperlink has the same session ID embedded (this would be done on the publisher's side) and simply logs the advertisement ID under the particular session ID in step 1014. Otherwise the system has to use other means of identifying a user, such as the IP (Internet Protocol) address of the connection, and log the display accordingly in step 1015. Persons skillful in the art will realize that other forms of identification can be used instead, such as an advertisement server assigned user ID transmitted via cookies. After storing log information, execution ends at step 1016.

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DOCUMENT-IDENTIFIER: US 6640218 B1
TITLE: Estimating the usefulness of an item in a collection of information

Brief Summary Text (4):
One context in which selection of items from a collection of information (e.g., a database) is useful is a "search engine." A typical search engine takes an alphanumeric query from a user (a "search string") and returns to the user a list of one or more items from the database that satisfy some or all of the criteria specified in the query.

Detailed Description Text (11):
Referring now to FIG. 1, a computer system 100 for rating search results may include a user workstation 110, a search engine 120, a database 130, a query log 140 and a click log 150. In some embodiments, user workstation 110 is a general purpose computer workstation including a keyboard 112, a video display 114, a pointing device (e.g. a mouse) 116, and a web browser software program 118. Search engine 120 may be a computer programmed with software that is capable of communicating, directly or indirectly, with user workstation 110 and of accessing database 130, query log 140, and click log 150. In particular, search engine 120 is capable of receiving a search query entered by a user through web browser 118 and of displaying to the user, through web browser 118, lists of items in database 130 that satisfy criteria in the search query. The lists are displayed in web browser 118 in hypertext format so that a user may use pointing device 116 to request that selected items from a list be displayed in web browser 118.

Detailed Description Text (16):
Next, the search engine 120 searches the database 130 for items 132 that match criteria specified in the normalized query and creates a list of matching items (step 230). The search engine then applies a relevance metric to each of the matching items to produce a relevance score (with respect to the particular query) (step 240). The relevance score may be determined by applying any known or subsequently developed metric that compares one or more intrinsic characteristics of an item with one or more criteria in a search query, for example those described in Manning and Schuitze, "Foundations of Statistical Natural Language Processing", MIT Press, Cambridge, Mass. (1999) pp. 529-574 and U.S. Pat. No. 6,012,053. After the relevance metric has been applied to each of the matching items, the list of matching items is reordered so that the items with higher relevance scores are placed in lower numbered rank positions (i.e., closer to the beginning of the list) (step 250).

Detailed Description Text (17):
After the list of matching items has been reordered according to relevance scores, search engine 120 displays the list to the user through the web browser 118 (step 260). In some embodiments, search engine 120 will initially display a web page that includes only the lowest ranked items in the list (i.e. those having the highest relevance factors), displayed in rank order, and allow the user to request the display of additional web pages that display successively higher ranked (i.e., less relevant) items. Each item is displayed with a title, a squib, and a hyperlink that enables the user to click on the item to display the underlying information resource it describes. The hyperlinks in the displayed pages are configured so when the user clicks on a particular hyperlink to select one of the displayed items, the user's web browser transmits an HTTP request to the search engine to display the underlying information resource described by the item. For example, if a displayed item describes a particular web page, clicking on the associated hyperlink will cause a

request to display that web page to be sent to search engine 120. Requests are sent to the search engine, rather than to the web server on which the underlying resource is located, to permit the search engine to keep track of what requests are made in response to the results of particular queries. Once received at the search engine, these requests are processed (as described below) and forwarded to the appropriate web server. (In non-Web based embodiments, the underlying information resource may be a record from database 130, which can be retrieved by search engine 120 directly.)

Detailed Description Text (18):
The list of items displayed in order of relevance score will be referred to as a "relevance list." In addition to creating and displaying the "relevance list" for a particular query, search engine 120 also creates and displays a separate "popularity list" for the received query (step 265). The popularity list includes popular items that have been previously selected by users in response to the same normalized query in the past. As with the items on the "relevance" list, the items on the "popularity" list each include a title and squib and a hyperlink enabling a user to access the underlying information resource. In some embodiments, the popularity list is displayed in the web browser simultaneously with the relevance list (i.e. in different parts of the same Web page). The steps taken to create the popularity list will be described below.

Detailed Description Text (19):
Referring now to FIG. 3, the following steps are taken when a user selects one of the items displayed in either the relevance list or the popularity list. The search engine receives the selection request (step 270) and creates a click record 180 in the click log 150, which includes the URL 182 of the item, along with the normalized query 184 and the rank 186 of the item in the relevance list displayed to the user (the "relevance rank" of the item with respect to the query) (step 280). (In some embodiments, even if the item is selected from the popularity list, the rank recorded in the click log is the relevance rank.) The search engine then redirects the user's request to the URL of the underlying information resource, using standard HTTP techniques known to those of skill in the art, which causes the underlying information resource to be displayed on the user's web browser (step 290). Because a user may wish to select more than one of the items displayed by the web browser, steps 270 through 290 may be repeated as many times as the user clicks on items in the list of matching items.

Detailed Description Text (29):
Referring now to FIG. 6, the following steps may be used to determine the Actual Pooled Popularity value for an item. First, the number of click records 180 in click log 150 that include the item are counted, and the Actual Pooled Popularity is set equal to that number (step 500). This number indicates the number of times that the item was selected by a user in response to any query. (In some embodiments, certain clicks originating from outside of the normal search engine interface are not counted. For example, certain click records may reflect "clicks" that are made through a metacrawler program. Such programs can query a number of search engines and then display a combined output of those search engines in a single list. When a user selects a displayed item by clicking on it, the request may be forwarded back to the search engine, thus counting as a "click." It may be useful to disregard such "clicks" because they do not represent clicks from a relevance ranked list produced by the search engine.)

Detailed Description Text (42):
Also, some or all of the Actual Pooled Popularity values, Predicted Pooled Popularity values, Predicted Selection Rates and Quality Adjusted Selection Rates for particular combinations of queries and items can be calculated in advance of their being needed. For example, if the contents of the query log and click log were limited to a "data snap shot" as of a certain time, the Actual Pooled Popularity values, Predicted Pooled Popularity values, Predicted Selection Rates and Quality Adjusted Selection Rates for all combinations of queries and items reflected in the click log could be calculated at that time, and stored in a separate database for use in generating popularity lists in real time. Alternatively, the "popularity list" for each query reflected in the click log could also be determined at the time the Quality Adjusted Selection Rates are determined.

Detailed Description Text (43):
The search engine may display in the relevance list only those items that do not appear in the popularity list. Also, in some embodiments the search engine may not

display a separate relevance list and popularity list, but may instead display a single list ordered according to relative Quality Adjusted Selection Rates. In such an embodiment, items in the relevance list that did not have an Actual Pooled Popularity value (because they had never before been selected by a user) could be assigned a Quality Adjusted Selection Rate equal to the value of the Selection Rate Predictor function (i.e. the expected selection rate in the absence of any information about quality).

Detailed Description Text (47):
The search engine is not limited to searching based on queries entered by users. For example, the search engine could search for items based on a user profile (e.g. a list of topics of interest to the user, demographic information about the user, or prior selection patterns of the user), or other contextual information. The Selection Rate Predictor function would then be a function of a measure of the relevance of an item with respect to the user profile or other contextual information.